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ASPECTS OF THE WAR.

Next to those in this country who have family ties in Germany or Austria, the bitterness of the war must be felt most keenly by the scientific workers whose fast friends and true comrades in research have suddenly become, at the call of their country, enemies and aliens. Our readers in particular have profited in the past from the generous co-operation in our work of the leaders of meteorological science in Austria and Germany. We have had so much to do with international collaboration in the study of the atmosphere and the ocean, which have no territorial limits, that the outbreak of war, unsoldering all the goodliest fellowship of common work, is in itself a defeat of our most cherished aims. It puts back the clock for generations it may be, and dashes our hope of reaching in our lifetime the promised land of full brotherly sympathy and co-operation, of which the Pisgah vision had recently been so clear.

The tremendous force of nationality and the unifying power of a common danger, which the war has demonstrated, are glimpses of real good arising already from the evil. The spectacle of the United Kingdom really united for the first time within the memory of most of us, of the British Empire spontaneously at one, showing no dividing line of subject and dominant race, or conquered and conquering people, offers some promise that out of the incalculably greater disruption which has torn apart the peoples of Europe, there may yet arise far off a still greater incarnation of unity.

We fully recognize that this is no time for brooding mournfully over the broken strings of international scientific progress, or for dreaming dreams of a new heaven and a new earth. At the moment the duty of everyone is clearly to support their country in a life and death struggle. We confidently believe that our side is right and must prevail. The sanctity of treaty obligations must be vindicated, the power of waging aggressive war must be restrained, and the nation that can obliterate an ancient university as an act of terrorism must be taught, just as Anarchist terrorists must be taught, that such methods of warfare are an outrage on civilization and an intolerable disgrace to humanity.

May not the originator of such a policy fear that his name in history may be changed, like that of Pashur, the son of Immer, to Magormissabib—a terror to himself and to all his friends.

ARGUMENTS FOR BASAL AND IMMEDIATE CROP ESTIMATES.

By H. Helm Clayton and W. M. Hays.

Estimates of crop conditions based on reports made by growers and by bureau agents are expensive, can be made only periodically and are mainly delayed records of climatic effects already wrought out in changed condition of crops.

Periodical estimates based on observed conditions as to the acreage and the excellent growth of the crop are, however, necessary at wide intervals of time to serve as bases of both annual and of immediate statistical estimates; and not being frequent, the expense of securing carefully made reports can thus be afforded.

If thus supplemented by "immediate estimates" based on climatic changes, the periodic reports of the conditions may be less frequent and at much less expense may be prepared with greater care.

The weather is the one great varying factor in crop production. By using the local records of temperature and rainfall of the destructive storms, and estimates of prospective climatic changes, prospects of crops can be foretold some time before the crops themselves indicate results of climatic changes, and in some cases before the climatic changes have occurred.

Since reports of meteorological conditions are gathered daily by telegraph they serve as an immediate basis for predicting changes in crop yields. And since a World Meteorological Organization will enable meteorological officers to predict meteorological changes, even these weather predictions will serve as bases for immediate estimates of crop prospects.

Immediate reports, based on climatic records, can supply to the public the needed estimates, quickly giving modifications of the estimates announced in the last previous periodical reports of the crop prospects.

Thus if the periodical report estimates the prospects of the crop of corn, as of August 1st, 1913, is 3,000,000,000 bushels, and a widespread drought gradually reduces the prospective yield, the record of high temperature and lack of rainfall will serve as a weekly or more frequent basis for immediately reducing the figure representing the prospective total yield. And if the weather forecasters can, with reasonable accuracy, forecast the continuance or the termination of the drought, that fact also can be utilized in determining what the immediate estimate should be.

This use of weather reports will provide for a school of methods in which the national statistical weather bureaus will learn to so co-operate and so organize the gathering of data, the predicting and the reporting of the co-ordinated data, that they will better use

the agencies at the command of the weather services in making the numerical figure at the periods regular of making " basal estimates."

The extension of the international and national reports on crops, so as to give immediate prediction as to what the effect of the weather is likely to be on each given crop, will greatly restrict the place now held by the private crop reporter, who helps his firm to get that advantageous position of a knowledge of what is coming and to take the advantage, either in speculation or in holding the wide difference in the price between the producer and consumer, while he reaps a too large middleman's profit for any service he may render.

Under this plan the statistics of crops, now confined largely to the non-perishable products, may be extended also to the perishable products, thus to do far more efficiently and economically that which is now done but poorly mainly by private parties, and with relatively high cost. There is, for example, no need of a loss of seventy-five carloads of strawberries for lack of railway cars when a large crop was ripening rapidly in one region of Virginia, because two rail roads lost out in not knowing until a few days too late that that they must have cars ready for a bumper crop at several stations on each of the two lines. Many of the facts secured at large expense by the California Fruit Exchange could, with little added expense, be secured for all similar exchanges, and would, at the same time, be available to railway and steamship transporting companies and to dealers, consumers and producers. Under this plan the agents of co-operative organizations will be able to sell and purchase their products under the same wide knowledge of conditions as the large city corporation now has through its specialized statistical service, and as the operators on the speculative markets also have at the cost of privately managed statistical bureaus.

This plan will lead statistical bureaus to be more inclusive and more comprehensive, so as to cover more nearly all the new factors needed in deciding the daily prices current in the market centres. The boards of trade and other assembled markets, and also the non-assembled markets, will, under the plan of broader, more detailed and more immediate statistics, limit their function to that of judging as to what the price should be, leaving to the public statistical bureaus the function of gathering and making known the basic data which mainly determine the fluctuations in supply and demand.

This will greatly relieve the market dealers from the influences of speculation, placing them in a better judicial position in determining the daily price warranted by the conditions nature has placed on production and demand.

Under a complete system of general and immediate statistics the more stable conditions of prices will give a narrower field for the influence of ownership in margins and futures, and there will be less opportunity for dealing in options in whatever form. There will also be less need of hedging on the part of manufacturers and dealers.

Furthermore, if the government will assume its full share of the work of commerce, that of giving full and immediate reports on acreage, conditions, amount harvested, amounts in store, whether in the raw or manufactured form; and as to the prospective purchasing power of those needing each product, it can the more consistently place restrictive measures about such excesses in our markets as speculation in assembled markets, wrong commission charges on the part of dealers who receive consignments of products for sale, and the surreptitiously storing in elevators and cold storage houses that can be used to widen unduly the range of prices between producers and consumers.

By extending the statistical service to perishable products, a national statistical service can so serve co-operative organizations and each local community can organize and sell or purchase its perishable products without undue profits being absorbed by middlemen.

This service will thus greatly assist in building up co-operative organization. And since only by co-operation can the middle class compete with centralized capital, an immediate statistical service is an aid in building up a middle class. Thus the government will help to build up a class of family farm owners, instead of vast estates owned by private and corporate interests. It will also encourage the building up of a strong non-agricultural middle-class. The farmers' co-operative organization will naturally be concerned mainly with selling their products, while they raise most of the commodities they use. The industrial and other non-agricultural classes, on the other hand, will co-operate mainly in the purchase of their supplies, since the commodities they help to produce are mainly sold by the co-operation in which they serve.

It will help bring about the transfer under most economical methods of the distribution of the products of each class of producers to consumers. It will aid co-operative producers to sell more direct to co-operative consumers, and will thus lead to a part of the middleman class becoming producers of agricultural products and consumers of non-agricultural products or producers of non-agricultural products and consumers of agricultural products.

Sufficient organized co-operative selling and co-operative purchasing of products will help so to standardize the business of private middlemen that their service to producers and consumers will become economically more efficient, and will perform the social function of middlemen not only at less expense but vastly more efficiently than now.

The use of daily telegraphic weather reports will make possible so many extensions and refinements of crop statistics and estimates that the statistical service can be extended to nearly all perishable as well as non-perishable products.

With a much elaborated statistical service the statistical bureaus

will supply information which will decrease the fluctuations of the acreage planted of the respective crops, and will decrease the fluctuations in the number grown annually of the respective breeds of animals. With less fluctuation in the amount of production and less opportunity for speculation, prices will adhere more closely to an average profitable point, fair and profitable alike to the producers, consumers, transporters, manufacturers, and dealers.

All this will result in more stable conditions for the producer, the dealer, the manufacturer, the transporter and the consumer. It will lessen the highest achievements of dealers, but it will make even the business of the middleman more stable, and will give him a more honourable place in our economic life.

M. Teisserenc de Bort, late Director of the French Dynamical Meteorological Observatory, said in a communication to the International Congress of 1910 :—

"The marked progress made by meteorological science in recent years, brings more and more into prominence the necessity for considering meteorological phenomena over the Earth as a whole. We have learned that compensation prevails between the values of the various meteorological elements of different points. Such a compensation justifies us in connecting with general phenomena anomalies which appear at first sight to be accidental.

Again, if we wish to study the external influences affecting our atmosphere, we must include the entire Earth in our investigations. The meteorological data collected and published at the present day are almost sufficient for this purpose, if we are content to study phenomena which occurred two or three years ago ; but researches of this kind necessitate laborious examinations of many different volumes, and I do not think I shall be contradicted when I say that it would be very desirable to follow, step by step, the general course of the events as they occur, even if all we can do is to obtain a preliminary glance which will bring into relief points which require detailed subsequent study. Amid all the complications which the atmosphere presents we must try to distinguish the accidental and secondary from the essential, and to do this effectively we must avail ourselves of every opportunity which offers. In my opinion one of the most hopeful lines of progress lies in the direction of studying the daily changes of phenomena all over the world.

It seems to me unnecessary to insist further on the advantages of a scheme which would place before us, day by day, the principal data in the physics of the atmosphere as observed in equatorial, temperate and polar regions."

The Institute can thus bring about world co-operation, securing immediate world area crop estimates which will give the facts of crop conditions at once, and free to all interested persons and organizations, including co-operative organizations of producers

and consumers, and at the same time it can develop a world meteorological bureau which will be of the greatest service to mankind.

A start can be made at inaugurating these improvements with a comparatively small cost. Their utility will determine the amount of money ultimately required. Possibly some persons or institutions would assist in making a beginning, but it may be hoped that the Institute will have means of making the necessary small start which can grow.

We feel that these plans for multiplying and improving the meteorological and crop estimating services of the world, will be of great value in relation to industry and commerce, and in making more equitable the markets as agencies for the transfer of products from producers to consumers.

Correspondence.

To the Editor of Symons's Meteorological Magazine.

BRIGHT AUGUST AT MARGATE.

THE following figures of the rainfall, temperature, and hours of sunshine at Margate for August may be of interest.

Rainfall, ·25 in. This is the lowest record for August for over thirty years, the nearest to it being in August 1883 with ·37 in. Rain fell only on three days, and from the 6th to the 26th not any was registered. The sunshine was 228·5 hours. Mean temperature, 63°·8. The highest shade maximum was 77°·5 on the 30th. The lowest miminum 51° on the 7th.

C. J. PEMBLE.

11, Godwin Road, Margate, 3rd September, 1914.

[The remarkably low August rainfall reported by Mr. Pemble appears to have affected only a small area; the only other reading of less than half-and-inch was ·32 in. recorded at Shoeburyness, while in the immediate neighbourhood of Margate ·60 in. was measured at Westgate. The patchy nature of the rainfall of August is well known, but it is more usual to find small wet patches in a dry area than, as in this case, to find small dry patches in a comparatively wet area. ED. *S.M.M.*]

THE AUTUMN FLOOD IN SNOWDONIA.

THE following amounts of rain fell in Snowdonia, causing a big flood on Afon Glaslyn and Conway.

Date.	Pen-y-Gwryd.	Copper Mine.	Intake.	Bungalow.
	in.	in.	in.	in.
Aug. 8	6·35	4·63	5·42	5·00
,, 9	·07			

ARTHUR LOCKWOOD.

Hafod-y-Gwynt, Pen-y-Gwryd, Llanberis, August 17th, 1914.

TEMPERATURE DURING PARTIAL SOLAR ECLIPSE.

I DO not know whether the following eclipse readings taken here on August 21st are of sufficient interest for publication, but I give them for what they are worth.

August 21st, 1914.

Time. a.m.	Dry bulb.	Wet bulb.	Temp. on Grass.	Weather.
	°	°	°	
10.45	65·7	59·6	75·4	Sunny.
11.0	66·9	60·2	83·0	do.
11.15	66·4	59·0	79·0	do.
11.30	66·2	60·1	74·8	Thin cloud.
11.45	63·8	59 0	69·0	do.
Noon	63·4	59·4	67·6	do.
p.m.				
0.15	63·0	59·1	66·0	Thick cloud.
0.30	62·5	59·1	65·4	
0.45	62·5	59·0	65·4	
1.0	61·2	58·4	60·6	Raining.

The effect of the eclipse on temperature was less than that of the breakdown of the weather.

H. NOWELL FFARINGTON, F.R.Met.Soc.

Worden, Leyland, Lancashire, 28th August, 1914.

The following were the temperature readings taken at Camden Square by Mr. D. S. Salter :—

August 21st, 1914.

Time.	Dry Bulb.	Wet Bulb.	SUN MAX. Black Bulb
a.m.	°	°	°
11.5	71·6	62·4	102·2
11.11	72·2	63·4	100·2
11.41	71·7	62·0	98·2
p.m.			
0.11	70·0	61·0	88·0
0.41	70·9	61·2	93·8
1.11	73·2	62·0	111·6
1.21	74·9	63·0	114·6
2.14	74·6	62·4	112·7

[ED. *S.M.M.*]

LUNAR RAINBOWS.

A LUNAR Rainbow, visible on two successive evenings, must form an event of considerable rarity, and I cannot recall a parallel case during an observational experience extending from 1865.

On Sunday, August 2nd, at about 10.40 p.m., after a slight shower the gibbous moon broke through a rift and a pretty complete and

distinct bow formed upon dark clouds in the northern sky, and was observed by many persons at Horfield, a northern suburb of this city. It soon faded and was reduced to a fragment at the end. Moon's age, 10 days, 20 hours. Declination, S. 28°. Altitude 9°.

On Monday, August 3rd, there was a heavy storm of rain at 10 p.m. and later, but it soon abated and the sky began to clear from west at about 10.20 p.m. The moon shone brightly through an opening and as the sprinkling drops from the receding storm were still falling a bright lunar bow became vividly projected upon the heavy northern clouds. It remained but a brief period but caused much comment among interested spectators, many of whom had never viewed such a novelty. Moon's age 11 days, 19 hours. Declination S. 26½°. Altitude 12°.

On August 7th, 10.10 to 10.15 p.m. there was a "mock moon" or paraselene. It formed on a thin white cloud at same altitude as the moon and about 23 degrees to the E. of her. At first there was a faint ascending ray from the paraselene; near the end the ray flowed horizontally eastwards. For several minutes the appearance was very similar to that of the moon, showing dimly through a cloud and it formed quite a striking phenomenon. Halves and fragments of haloes were observed before and after the paraselene, in fact there was much thin filmy cloud over the sky and of a character which frequently produces the features described.

W. F. DENNING.

Horfield, Bristol, August 10th, 1914.

SOLAR HALO.

A BEAUTIFUL solar halo was visible here on Friday, June 26th, from 8.30 to 9 a.m. At 8.30 the circle was complete with a radius of about 22°, brilliantly coloured, with red nearest the sun; at 8.45 taking the form of an arc above the sun, in a N.W. direction with slightly larger radius, and very vivid colours, the whole disappearing at 9 a.m. The sky was half covered with cirro-stratus from N.W., and a few cirri from N.E., the wind being N.E., force 2. This was preceded by a minimum in screen of 37°, and 35° on the grass, the lowest we have had in June for several years. The barometer at the time was standing at 30·433 in., and the weather for the rest of the day was very fine and hazy with the max. in screen reaching 70°.

F. LOWE.

S. Michael's, Tenbury, Worcestershire, June 29th, 1914.

INTERNATIONAL BALLOON ASCENTS.

By W. H. DINES, F.R.S.

September 14th, 1911.

Starting Point.	Country.	A (Hc.) miles.	B (T_c.) ° F.	C miles.	D ° F.	E miles	F
Manchester	England ..	5·9	−47	10·0	−38	61	E.
Pyrton Hill.....	,, ..	6·3	−58	11·9	−51	72	E.N.E.
,, 6.47 p.m.	,, ..	7·3	−73	9·4	−65	60	E.
Petersfield	,, ..	6·3	−63	11·9	−53	77	E. by N.
Brussels	Belgium ..	6·9	−78	9·6	−72	80	S.S.E.
Hamburg.....	Germany..	7·6	−69	7·7	−68	84	E. by N.
Lindenberg.....	,,	6·9	−76	8·7	−69	78	E.N.E.
Paris.....	France	...	...	6·9	−76	94	E.N.E.
Strassburg	Germany ..	8·3	−80	10·1	−65	63	E.N.E.
Munich	,, ..	7·9	−77	10·7	−67	42	E.N.E.
Vienna.....	Austria	7·5	−67	9·4	−50	26	N.E. by E.
Pavlovsk.....	Russia	6·7	−75	10·2	−60	84	S. by E.

September 15th, 1911.

Crinan	Scotland ..	5·7	−54	9·4	−54	68	S. by W.
Manchester.....	England ..	5·9	−61	11·3	−56	54	E.S.E.
Pyrton Hill.....	,, ..	6·9	−62	12·5	−54	35	E. by S.
Petersfield	,, ..	6·6	−59	9·4	−55	53	E.
Paris.....	France ...	7·0	−69	8·8	−62	56	E. by N.
Strassburg.....	Germany ..	7·0	−69	10·8	−64	46	E. by N.
Munich	,, ..	7·5	−76	9·1	−72	67	N.E.
Vienna.....	Austria ..	7·6	−92	8·3	−69	...	...
Pavia	Italy	7·3	−81	9·7	−42	112	NE. by N.
Pavlovsk.....	Russia	6·9	−51	11·3	−49	84	E.N.E.
Nizhni Olchedaeff	,, ..	6·9	−78	8·9	−66	38	E.N.E.

September 16th, 1911.

Brussels	Belgium ..	6·7	−62	16·3 ?	−60	51	E. by S.
Hamburg	Germany ..	5·6	−48	8·3	−58	16	S.E.
Strassburg	,, ..	7·2	−67	9·2	−62	46	E.N.E.
Munich	,, ..	7·3	−67	10·9	−62	54	E.N.E.
Vienna.....	Austria ..	6·7	−70	8·3	−60	38	E.
Pavia	Italy.....	7·5	−75	10·2	−61	84	E.
Pavlovsk.....	Russia	7·1	−48	11·0	−51	38	E.S.E.

A Height in miles of commencement of isothermal column.
B Temperature, F°., at bottom of column.
C Greatest height of reliable record in miles.
D Temperature, F°., at greatest height.
E Distance in miles of point where balloon fell.
F Bearing of falling point from starting point.

On September 14th a low pressure area lay over the Gulf of Finland, and a high pressure stretched across the North Atlantic, from Ireland to Greenland. Similar conditions held on the 15th, but the anticyclone over the Atlantic was more to the south. On the 16th the low pressure had removed to the east and another low pressure had appeared over Iceland.

A very steady and general drift of air towards the East is shown on each day, although the barometric gradients seemed in favour of a north to south flow. Considerable discrepancies are shown in the temperatures, possibly some of them instrumental, the —38 at Manchester on the 14th, and the —42 at Pavia on the 15th, are much beyond the usual range, and are perhaps due to solar radiation. On the other hand the —92 at Vienna is very low, especially when the date and height of the barometer is taken into account.

REVIEW.

Ninth Annual Report of the Meteorological Committee to the Lords Commissioners of His Majesty's Treasury, for the year ended March 31st, 1914. London, H.M. Stationery Office. Size 9½ × 6, pp. 69. Price 4d.

THE ninth annual report of the Meteorological Committee dealing with the year 1913-14, the fifty-ninth year of the existence of the Meteorological Office, is altered in form by the omission of the detailed lists of stations and of institutions supplying meteorological data which are published separately. The activity of the Meteorological Office continues to increase, both in the direction of the organization of the various departments with which it deals and in the prosecution of meteorological research.

The staff of the Office has been strengthened during the year by the appointment of a number of junior professional assistants who are all University graduates. Among other important branches of the work, it is thus hoped to make more rapid progress with the co-ordination of meteorological statistics from various parts of the globe. Other research forwarded by this means has been the discussion of the observations of Captain Scott's Second Antarctic Expedition and the preparation of a report on ice in the Atlantic for the Board of Trade.

It is announced that the contribution hitherto made towards the expense incurred by the Scottish Meteorological Society in collecting and editing meteorological returns, has been increased to £450 per annum, and that a branch Meteorological Office has been instituted in Edinburgh for the purpose of dealing with local meteorological records and research. The superintendent of this branch is at the same time the Secretary of the Scottish Meteorological Society.

An appendix gives particulars of the absolute units recently adopted by the Meteorological Office for use in the Daily Weather Report, and explains in detail the reasons which gave rise to the change, the principal object being that of advancing towards a set of units common to all nations. Together with the adoption of absolute units for temperature readings, and the percentage barometer, the metric system has been introduced for recording rainfall.

METEOROLOGICAL NEWS AND NOTES.

MR. R. C. MOSSMAN, who acted as Editor of this Magazine from the issue of November, 1913, to that of August, 1914, has decided to return to his duties in South America, and with the present number Dr. H. R. Mill resumes the editorship. Our readers will, we are sure, join us in thanking Mr. Mossman for his capable and conscientious labours during the last ten months, and we are sure that never in recent years has the Magazine been so well catered for as under his charge. The work has been so well done that it places us in no little difficulty to maintain the standard he has set. This difficulty is increased by the necessity imposed by the economic results of the War, to reduce the size of each number for the present, a reduction we make most reluctantly, and hoping that it will not be for long.

THE METEOROLOGICAL NOTES hitherto occupying the penultimate page of each issue, have been fused this month with the article on the Weather of the Month. This has been done primarily in the effort to minimize the effect of the reduction of the size of the Magazine from 20 to 16 pages, made necessary by the sudden fall in the income of the British Rainfall Organization on account of the war. We hope, however, that the new arrangement may commend itself to our readers, for it avoids a certain amount of overlapping of information, and enables us to incorporate the results obtained by a greater number of Observers than was possible when the individual remarks from a few stations only were quoted. We earnestly hope that none of the monthly Observers, who favour us with remarks on weather, will consider that these are less appreciated, although utilized in a new form.

THE DAILY WEATHER REPORT of the Meteorological Office, as issued during the past few weeks, reflects in an interesting manner the progress of events in Europe. The earliest symptoms of interference may be seen in the absence of the Vienna observations on July 26th, followed on the 27th by St. Petersburg, and on August 1st by Berlin. During the next few days the German stations disappeared one by one from the list. Swedish records also failed on the 1st, and all the Scandinavian ones on the 7th. From the 4th, part of the French records, including Belfort, were absent, on the 5th the Faroes and Southern Europe were cut off. Brussels appeared regularly till the 16th, but from the 17th to 22nd the Continent was practically unrepresented. The French observations mostly re-appeared on the 23rd, and on September 5th the Norwegian records brought back something of the customary appearance of the *Daily Weather Report*.

ERRATUM.—In August number, page 126, line 28, *for* "were uniformly" *read* "were not uniformly."

RAINFALL TABLE FOR AUGUST, 1914.

STATION.	COUNTY.	Lat. N.	Long. W. [*E.]	Height above Sea. ft.	RAINFALL OF MONTH. Aver. 1875—1909. in.	1914. in.
		° ′	° ′			
Camden Square	*London*	51 32	0 8	111	2·39	1·24
Tenterden	*Kent*	51 4	*0 41	190	2·42	1·30
Arundel (Patching)	*Sussex*	50 51	0 27	130	2·52	1·71
Fawley (Cadland)	*Hampshire*	50 50	1 22	52	2·85	2·75
Oxford (Magdalen College)	*Oxfordshire*	51 45	1 15	186	2·44	2·01
Wellingborough (Croyland Abbey)	*Northampton*	52 18	0 41	174	2·38	...
Shoeburyness	*Essex*	51 31	*0 48	13	1·74	·32
Bury St. Edmunds (Westley)	*Suffolk*	52 15	*0 40	226	2·52	·79
Geldeston [Beccles]	*Norfolk*	52 27	*1 31	38	2·22	·81
Polapit Tamar [Launceston]	*Devon*	50 40	4 22	315	3·17	2·62
Rousdon [Lyme Regis]	,,	50 41	3 0	516	2·84	2·96
Stroud (Upfield)	*Gloucestershire*	51 44	2 13	226	2·90	1·44
Church Stretton (Wolstaston)	*Shropshire*	52 35	2 48	800	3·43	3·77
Coventry (Kingswood)	*Warwickshire*	52 24	1 30	340	2·81	1·93
Boston	*Lincolnshire*	52 58	0 1	11	2·39	1·67
Worksop (Hodsock Priory)	*Nottinghamshire*	53 22	1 5	56	2·55	1·41
Macclesfield	*Cheshire*	53 15	2 7	501	3·70	4·26
Southport (Hesketh Park)	*Lancashire*	53 39	2 59	38	3·73	1·64
Arncliffe Vicarage	*Yorkshire, W.R.*	54 8	2 6	732	5·62	3·03
Wetherby (Ribston Hall)	,, ,,	53 59	1 24	130	2·78	2·39
Hull (Pearson Park)	,, *E.R.*	53 45	0 20	6	3·05	2·44
Newcastle (Town Moor)	*Northumberland*	54 59	1 38	201	3·20	1·61
Borrowdale (Seathwaite)	*Cumberland*	54 30	3 10	423	11·47	8·86
Cardiff (Ely)	*Glamorgan*	51 29	3 13	53	4·54	3·83
Haverfordwest	*Pembroke*	51 48	4 58	90	4·21	7·37
Aberystwyth (Gogerddan)	*Cardigan*	52 26	4 1	83	4·88	4·12
Llandudno	*Carnarvon*	53 20	3 50	72	3·16	1·29
Cargen [Dumfries]	*Kirkcudbright*	55 2	3 37	80	4·23	...
Marchmont House	*Berwick*	55 44	2 24	498	3·54	2·17
Girvan (Pinmore)	*Ayr*	55 10	4 49	207	4·54	5·48
Glasgow (Queen's Park)	*Renfrew*	55 53	4 18	144	3·62	2·76
Inveraray (Newtown)	*Argyll*	56 14	5 4	17	6·02	6·31
Mull (Quinish)	,,	56 34	6 13	35	5·00	4·53
Dundee (Eastern Necropolis)	*Forfar*	56 28	2 57	199	3·34	2·68
Braemar	*Aberdeen*	57 0	3 24	1114	3·63	1·88
Aberdeen (Cranford)	,,	57 8	2 7	120	3·07	1·12
Cawdor	*Nairn*	57 31	3 57	250	3·05	2·12
Fort Augustus (S. Benedict's)	*E. Inverness*	57 9	4 41	68	3·52	3·03
Loch Torridon (Bendamph)	*W. Ross*	57 32	5 32	20	6·61	7·72
Dunrobin Castle	*Sutherland*	57 59	3 56	14	2·71	2·05
Wick	*Caithness*	58 26	3 6	77	2·73	1·60
Killarney (District Asylum)	*Kerry*	52 4	9 31	178	4·57	5·04
Waterford (Brook Lodge)	*Waterford*	52 15	7 7	104	3·73	5·23
Nenagh (Castle Lough)	*Tipperary*	52 54	8 24	120	4·04	4·87
Ennistymon House	*Clare*	52 57	9 18	37	5·01	6·49
Gorey (Courtown House)	*Wexford*	52 40	6 13	80	3·31	3·75
Abbey Leix (Blandsfort)	*Queen's County*	52 56	7 17	532	3·94	4·88
Dublin (Fitz William Square)	*Dublin*	53 21	6 14	54	3·08	3·22
Mullingar (Belvedere)	*Westmeath*	53 29	7 22	367	4·00	6·00
Crossmolina (Enniscoe)	*Mayo*	54 4	9 16	74	4·68	3·19
Cong (The Glebe)	,,	53 33	9 16	112	4·70	4·89
Collooney (Markree Obsy.)	*Sligo*	54 11	8 27	127	4·30	5·39
Seaforde	*Down*	54 19	5 50	180	3·64	4·02
Bushmills (Dundarave)	*Antrim*	55 12	6 30	162	4·06	4·08
Omagh (Edenfel)	*Tyrone*	54 36	7 18	280	4·22	4·07

RAINFALL TABLE FOR AUGUST, 1914—*continued.*

RAINFALL OF MONTH (*con.*)					RAINFALL FROM JAN. 1.					
Diff. from Av. in.	% of Av.	Max. in 24 hours. in.	Max. in 24 hours. Date.	No. of Days	Aver. 1875—1909. in.	1914. in.	Diff. from Aver. in.	% of Av.	Mean Annual 1875-1909. in.	STATION.
—1·15	52	·52	5	9	15·92	13·63	—2·29	86	25·11	Camden Square
—1·12	54	·45	26	13	16·07	16·41	+ ·34	102	27·64	Tenterden
— ·81	68	·50	15	12	17·44	17·54	+ ·10	101	30·48	Patching
— ·10	96	·53	16	15	18·58	20·27	+1·69	109	31·87	Cadland
— ·43	82	·90	4	13	15·47	15·67	+ ·20	101	24·58	Oxford
...	...	...	...	...	16·06	...	..	...	25·17	Croyland Abbey
—1·42	18	·14	5	9	11·47	10·84	— ·63	95	19·28	Shoeburyness
—1·73	31	·19	1	9	15·96	14·61	—1·35	92	25·40	Westley
—1·41	37	·30	20	10	14·20	12·93	—1·27	91	23·73	Geldeston
— ·55	83	·72	14	16	21·79	27·66	+5·87	127	38·27	Polapit Tamar
+ ·12	104	·85	14	13	19·85	24·45	+4·60	123	33·54	Rousdon
—1·46	50	·31	25	15	18·73	18·25	— ·48	97	29·81	Stroud
+ ·34	110	1·74	1	15	20·31	20·38	+ ·07	100	32·41	Wolstaston
— ·88	69	...	...	...	18·16	13·45	—4·71	74	28·98	Coventry
— ·72	70	·35	21	11	14·60	12·26	—2·34	84	23·35	Boston
—1·14	55	·42	9	14	15·70	11·77	—3·93	75	24·46	Hodsock Priory
+ ·50	113	·74	2	17	21·93	24·14	+2·21	110	34·73	Macclesfield
—2·09	44	·57	8	13	19·61	17·37	—2·24	89	32·70	Southport
—2·59	54	·72	2	14	37·59	34·94	—2·65	93	61·49	Arncliffe
— ·39	86	·60	3	9	16·97	15·56	—1·41	92	26·87	Ribston Hall
— ·61	80	·73	24	13	16·52	14·14	—2·38	86	26·42	Hull
—1·59	50	·49	2	13	17·65	15·94	—1·71	90	27·94	Newcastle
—2·61	77	4·71	8	14	76·76	78·97	+2·21	103	129·48	Seathwaite
— ·71	84	·89	25	17	25·02	31·01	+5·99	124	42·28	Cardiff
+3·16	175	1·15	25	17	27·05	30·73	+3·68	114	46·81	Haverfordwest
— ·76	84	·73	25	17	27·03	30·48	+3·43	113	45·46	Gogerddan
—1·87	41	·43	25	9	18·05	17·02	—1·03	94	30·36	Llandudno
...	...	...	...	...	26·49	...	...	...	43·47	Cargen
—1·37	61	·37	2	13	21·22	16·25	—4·97	77	33·76	Marchmont
+ ·94	121	1·12	9	17	29·37	33·25	+3·88	113	49·77	Girvan
— ·86	76	·57	8	16	22·04	21·06	— ·98	96	35·97	Glasgow
+ ·29	105	1·28	8	19	40·06	44·12	+4·06	110	68·67	Inveraray
— ·47	91	1·05	23	18	32·67	33·18	+ ·51	102	56·57	Quinish
— ·66	80	·61	2	15	18·20	15·68	—2·52	86	28·64	Dundee
—1·75	52	·81	2	13	21·43	20·87	— ·56	97	34·93	Braemar
—1·95	37	·26	3	11	20·09	16·69	—3·40	83	32·73	Aberdeen
— ·93	70	·75	1	9	18·70	17·02	—1·68	91	29·33	Cawdor
— ·49	86	·69	23	17	26·72	23·88	—2·84	89	44·53	Fort Augustus
+1·11	117	1·61	23	17	49·51	59·70	+10·19	121	83·93	Bendamph
— ·66	76	·85	2	13	19·90	19·33	— ·57	97	31·90	Dunrobin Castle
—1·13	59	·63	2	18	18·11	17·10	—1·01	94	29·88	Wick
+ ·47	110	1·17	23	20	32·97	39·82	+6·85	121	54·81	Killarney
+1·50	140	1·37	14	19	24·26	24·28	+ ·02	100	39·57	Waterford
+ ·83	121	·97	23	19	24·57	25·47	+ ·90	104	39·43	Castle Lough
+1·48	130	1·30	1	21	28·25	33·71	+5·46	119	46·52	Ennistymon
+ ·44	113	1·35	25	14	21·63	21·02	— ·61	97	34·99	Courtown Ho.
+ ·94	124	1·05	14	18	22·77	23·79	+1·02	104	35·92	Abbey Leix
+ ·14	105	1·00	14	17	17·83	14·46	—3·37	81	27·68	Dublin
+2·00	150	2·35	14	20	23·17	24·42	+1·25	105	36·15	Mullingar.
—1·49	68	·56	7	20	31·32	32·96	+1·64	105	52·87	Enniscoe
+ ·19	104	·74	22	19	29·83	33·39	+3·56	112	48·90	Cong
+1·09	125	1·18	14	20	26·49	30·06	+3·57	114	42·71	Markree
+ ·38	110	·70	26	17	24·38	21·63	—2·75	89	38·91	Seaforde
+ ·02	100	·92	1	18	22·83	21·50	—1·33	94	37·56	Dundarave
— ·15	96	·65	23	17	24·66	25·29	+ ·63	103	39·38	Omagh

SUPPLEMENTARY RAINFALL, AUGUST, 1914.

Div.	STATION.	Rain inches.	Div.	STATION.	Rain inches.
II.	Warlingham, Redvers Road .	1·71	XI.	Lligwy	1·60
,,	Ramsgate	·70	,,	Douglas	3·89
,,	Hailsham	·99	XII.	Stoneykirk, Ardwell House...	4·21
,,	Totland Bay, Aston House...	2·08	,,	Dalry, The Old Garroch	6·01
,,	Stockbridge, Ashley..	2·79	,,	Beattock, Kinnelhead	5·24
,,	Grayshott	1·67	,,	Langholm, Drove Road	5·18
III.	Harrow Weald, Hill House...	1·08	XIII.	Meggat Water, Cramilt Lodge	3·51
,,	Caversham, Rectory Road ...	2·04	,,	North Berwick Reservoir	2·42
,,	Pitsford, Sedgebrook...	1·55	,,	Edinburgh, Royal Observaty.	1·48
,,	Woburn, Milton Bryant	1·29	XIV.	Maybole, Knockdon Farm ...	3·71
,,	Chatteris, The Priory	1·78	XV.	Ballachulish House	...
IV.	Elsenham, Gaunts End	·89	,,	Campbeltown, Witchburn ..	3·97
,,	Colchester, Hill Ho., Lexden	·61	,,	Holy Loch, Ardnadam	7·67
,,	Ipswich, Rookwood, Copdock	1·14	,,	Islay, Eallabus	6·05
,,	Blakeney	2·98	,,	Tiree, Cornaigmore	4·30
,,	Swaffham ..	1·32	XVI.	Dollar Academy	3·97
V.	Bishops Cannings	2·94	,,	Balquhidder, Stronvar..	5·05
,,	Wimborne, St. John's Hill ...	3·76	,,	Glenlyon, Meggernie Castle..	4·48
,,	Ashburton, Druid House.. ..	3·91	,,	Blair Atholl	3·09
,,	Cullompton	3·19	,,	Coupar Angus	2·51
,,	Lynmouth, Rock House	3·46	,,	Montrose, Sunnyside Asylum.	1·51
,,	Okehampton, Oaklands.. ...	3·44	XVII.	Alford, Lynturk Manse	2·07
,,	Hartland Abbey	5·32	,,	Fyvie Castle	1·87
,,	Probus, Lamellyn	1·81	,,	Keith Station ..	2·50
,,	North Cadbury Rectory	2·66	XVIII.	Rothiemurchus	2·58
VI.	Clifton, Pembroke Road	2·91	,,	Loch Quoich, Loan	14·10
,,	Ross, The Graig ..	1·42	,,	Drumnadrochit ..	1·87
,,	Shifnal, Hatton Grange	1·96	,,	Skye, Dunvegan	5·62
,,	Droitwich	1·87	,,	Lochmaddy, Bayhead	3·38
,,	Blockley, Upton Wold	1·46	,,	Glencarron Lodge	7·12
VII.	Market Overton	1·52	XIX.	Inversnin	1·59
,,	Market Rasen	1·39	,,	Melvich	3·12
,,	Bawtry, Hesley Hall	1·99	,,	Loch Stack, Ardchullin	4·45
,,	Derby, Midland Railway	1·64	XX.	Skibbereen Rectory	4·45
,,	Buxton	4·56	,,	Dunmanway, The Rectory ..	6·15
VIII.	Nantwich, Dorfold Hall	2·84	,,	Glanmire, Lota Lodge, No. 1	3·90
,,	Chatburn, Middlewood	2·46	,,	Mitchelstown Castle	3·39
,,	Cartmel, Flookburgh	...	,,	Darrynane Abbey	6·43
IX.	Langsett Moor, Up. Midhope	1·86	,,	Clonmel, Bruce Villa	4·56
,,	Scarborough, Scalby	2·74	,,	Newmarket-on-Fergus, Fenloe	5·62
,,	Ingleby Greenhow	1·24	XXI.	Laragh, Glendalough	4·37
,,	Mickleton	1·70	,,	Ballycumber, Moorock Lodge	5·13
X.	Bellingham, High Green Manor	2·40	,,	Balbriggan, Ardgillan ..	3·28
,,	Ilderton, Lilburn Cottage ...	2·12	XXII.	Woodlawn	4·42
,,	Keswick, The Bank	3·20	,,	Westport, St. Helens	3·14
XI.	Llanfrechfa Grange	2·41	,,	Dugort, Slievemore Hotel ..	4·78
,,	Treherbert, Tyn-y-waun	7·63	,,	Mohill Rectory	5·93
,,	Carmarthen, The Friary	4·54	XXIII.	Enniskillen, Portora	...
,,	Castle Malgwyn [Llechryd]...	2·90	,,	Dartrey [Cootehill]	4·49
,,	Crickhowell, Tal-y-maes	3·50	,,	Warrenpoint, Manor House	3·39
,,	New Radnor, Ednol	3·63	,,	Banbridge, Milltown	2·62
,,	Birmingham WW., Tyrmynydd	4·37	,,	Belfast, Cave Hill Road	3·55
,,	Lake Vyrnwy	3·92	,,	Glenarm Castle	...
,,	Llangyhanfal, Plâs Draw	1·21	,,	Londonderry, Creggan Res...	3·21
,,	Dolgelly, Bryntirion	4·19	,,	Dunfanaghy, Horn Head ...	3·03
,,	Bettws-y-Coed, Tyn-y-bryn...	3·52	,,	Killybegs	4·34

THAMES VALLEY RAINFALL. —— AUGUST, 1914.

ALTITUDE SCALE
Below 250 feet
250 to 500 feet
500 to 1000 feet
Above 1000 feet
SCALE OF MILES
0 5 10 15 20
WARWICK
WORCESTER
NORTHAMPTON
BEDFORD
CAMBRIDGE
SUFFOLK
GLOUCESTER
OXFORD
BUCKINGHAM
HERTFORD
ESSEX
MIDDLESEX
BERKSHIRE
WILTSHIRE
HAMPSHIRE
SURREY
KENT
SUSSEX
SALISBURY PLAIN
WHITE HORSE HILLS
CHILTERN HILLS
HINDHEAD
FOREST RIDGES
RIVER THAMES
Stratford on Avon
Banbury
Buckingham
Bicester
Woodstock
Witney
Abingdon
Wantage
Faringdon
Swindon
Lambourne
Hungerford
Newbury
Reading
Wallingford
Henley
Goring
Slough
Windsor
Eton
Chesham
Aylesbury
Hitchin
Bedford
Ampthill
Woburn
Dunstable
Luton
Hatfield
Watford
Barnet
Enfield
Edmonton
Harrow
Willesden
Ealing
Hampton
Kingston
Guildford
Dorking
Epsom
Croydon
Wokingham
Basingstoke
Andover
Farnham
Alton
Winchester
Salisbury
Stockbridge
Haslemere
Horsham
E. Grinstead
Tunbridge Wells
Crowborough
Tenterden
Ashford
Maidstone
Sevenoaks
Dartford
Greenwich
Romford
Epping
Ongar
Chelmsford
Maldon
Colchester
Southminster
Wickford
Southend
Sheerness
Chatham
Royston
Cambridge
Newmarket
Bury St Edmunds
Haverhill
Sudbury
Newport
Throcking
Bishop's Stortford
Great Dunmow
Halstead
Tilbury
Devizes
Trowbridge
Warminster
Shrewton
Chippenham
Calne
Marlborough
Cirencester
Stroud
Gloucester
Tewkesbury
Evesham
Farnborough
Blockley
Stow on the Wold
Northleach
Andoversford
Cheltenham
Winslow
Olney
Towcester
Daventry
Sharnbrook
St Neots
Biggleswade
Hitchin
Bennington
Hertford
Berkhamsted
St Albans
Potters Bar
Tring
Wycombe
Amersham
Uxbridge
Staines
Teddington
Wellington College
Kingsclere
Whitchurch
Alresford
Petersfield
Midhurst
Arundel
Worthing
Brighton
Lewes
Eastbourne
Hastings
Rye
Canterbury
Deal
Dover
Folkestone
Margate
Ramsgate
Whitstable
Sittingbourne
Faversham
Gravesend
Tilbury
Basildon
Brentwood
Harlow
Saffron Walden
Bishop's Stortford
Felixstowe
Ipswich
Woodbridge
Aldeburgh
Lowestoft
Yarmouth
Norwich
Thetford
Newmarket
Ely
Peterborough
Wisbech
Spalding
Boston
Lincoln
Grantham
Stamford
Oakham
Melton Mowbray
Leicester
Rugby
Coventry
Nuneaton
Tamworth
Lichfield
Burton
Derby
Ashbourne
Matlock
Buxton
Leek
Stoke
Newcastle
Crewe
Nantwich
Chester
Wrexham
Shrewsbury
Oswestry
Ludlow
Bridgnorth
Wolverhampton
Dudley
Birmingham
Redditch
Evesham
Worcester
Malvern
Hereford
Ross
Monmouth
Abergavenny
Brecon
Merthyr Tydfil
Cardiff
Newport
Chepstow
Bristol
Weston-super-Mare
Taunton
Wellington
Tiverton
Exeter
Honiton
Axminster
Lyme Regis
Bridport
Dorchester
Weymouth
Poole
Bournemouth
Christchurch
Lymington
Ringwood
Fordingbridge
Romsey
Southampton
Eastleigh
Fareham
Portsmouth
Havant
Chichester
Bognor
Littlehampton
Worthing
Shoreham
Newhaven
Seaford
Eastbourne
Hastings
Rye
Ashford

THE WEATHER OF AUGUST.

DURING the first week a depression whose centre hovered between the British Isles and Iceland caused southerly or south-westerly winds to predominate, accompanied by rather low day temperatures and a good deal of rain. On the 1st there was 1·74 in. of rain at Wolstaston, of which 1·08 in. fell in an hour, between 6 and 7 p.m. More than 1 inch fell at many widely distributed stations throughout the Kingdom. A secondary depression travelled from the south-west of England to the North Sea on the 4th and 5th, bringing heavy rain, the highest falls reported being 1·48 in. at Goring and 1·43 in. at Surbiton, both on the 5th. Unsettled conditions continued and on the 8th heavy rain fell over the north-west of England and south-west of Scotland. Several stations had over 2 inches, and at Sawrey there was 3·31 in., at Dungeon Ghyll 3·55 in. and at Seathwaite 4·71 in. At Blaenau Festiniog the reading for the 8th was not taken, but for the 2 days 8th and 9th the fall was 5·48 in. At many stations the lowest temperature of the month also occurred on the 8th, minimum values of 42° being reported at Marlborough and Llangammarch Wells, 41° at Buxton, and 37° at Balmoral. An anticyclonic system spread over the Kingdom from the Atlantic on the 11th, causing fair or fine weather with a rise in temperature. On the 14th a shallow depression over the south of Ireland and the south-west of England was accompanied by severe thunderstorms and heavy rain, and, in some places, hail. At Mullingar 2·35 in. of rain was measured, at Castledermot 2·85 in., at Gillardstown 2·95 in., and at Packenham Hall 3·22 in. Many stations in Devon had about 1·50 in. on the 14th, and less heavy falls on the 15th. On the 16th the anticyclone which had previously moved away from these Islands in a north-easterly direction, expanded southwards again and occasioned a renewal of fair, dry weather over the entire country. Rain fell in most of the western and northern districts on the 20th, and thunderstorms or thunder only occurred in nearly all parts of Great Britain on the 21st. In the week following the distribution of pressure was mainly cyclonic, and the weather was, therefore, of a generally unsettled character. Between the 23rd and 26th heavy rain, frequently accompanied by thunder and lightning, was experienced in many places in the west and north of the British Isles. The largest falls on the 23rd were 1·61 in. at Bendamph, and 1·17 in. at Killarney and Dunmanway. On the 24th there was 1·82 in. at Filey and 1·55 in. at Lowthorpe. Many places in Ireland, Wales, and the west of Scotland had over 1 inch on the 25th, the greatest falls being 1·67 in. at Blaenau Festiniog and 1·35 in. at Courtown (Co. Wexford). Unusual warmth prevailed during the last 10 days, the maximum temperatures being generally recorded on 23rd or 24th. Over 70° was recorded in practically all districts, except the north of Scotland, and readings above 80°

occurred in the east and south-east of England, the highest being 82° at Norwich and Raunds, 84° at Greenwich, and 86° at Camden Square. Very little rain fell in the last few days, except in the south-east of Ireland, where several stations had upwards of 1 inch of rain on the 29th.

In London the conditions were fair to showery in the first ten days of the month, after which the weather was generally sunny and warm with but little rain. The mean temp., 64°·2, was 1°·9 above the average. The duration of sunshine was 167·5 hours, and of rain 21·9 hours.

The general rainfall over the Kingdom as a whole, expressed as a percentage of the average, was as follows :—England and Wales, 75 : Scotland, 85 ; Ireland, 114 ; British Isles, 89.

Climatological Table for the British Empire, March, 1914.

STATIONS. (*Those in italics are South of the Equator.*)	Absolute. Maximum. Temp.	Date.	Absolute. Minimum. Temp.	Date.	Average. Max.	Min.	Dew Point.	Humidity. 0-100	Absolute. Max. in Sun.	Min. on Grass.	Total Rain. Depth.	Days.	Aver. Cloud.
	°		°		°	°	°		°	°	inches		
London, Camden Square	65·5	31	28·4	11, 22	51·1	37·9	39·3	85	108·7	22·4	4·51	25	6·6
Malta	68·0	22	46·5	4, 5	60·8	53·1	...	83	126·5	..	1·11	8	1·5
Lagos	91·0	3, 10	73·0	27, 30	89·0	77·1	75·3	76	160·0	70·0	3·13	8	6·1
Cape Town	95·1	1	46·4	26	78·7	58·5	56·4	68	...	...	·33	4	3·5
Natal, Durban ...	79·0	4	63·0	15	75·9	68·5	67·7	79	...	...	5·74	14	5·0
Johannesburg	80·5	30	45·4	9	74·6	55·0	52·4	72	..	43·8	2·93	10	3·7
Mauritius	89·8	10	67·9	7	85·2	73·1	72·4	82	...	60·4	8·83	18	6·1
Bloemfontein ...	88·6	11, 12	47·9	27	81·7	57·1	53·7	85	...	...	1·69	9	2·4
Calcutta...	100·1	30	62·5	6	91·4	70·3	64·1	61	...	57·7	·37	1	2·3
Bombay...	87·4	31	67·5	14	84·6	72·0	67·8	78	134·8	56·7	...	...	1·0
Madras	96·1	11	68·3	4	90·4	73·9	71·6	74	157·6	65·8	·00	0	1·3
Colombo, Ceylon ...	92·1	26, 28	71·1	6	89·3	74·0	73·3	78	158·0	67·1	3·80	9	5·1
Hongkong	82·3	9	49·5	17	71·7	63·5	62·4	83	...	...	1·19	6	7·7
Sydney	83·0	19	59·9	4	76·3	65·1	62·0	77	143·0	53·5	11·00	25	6·1
Melbourne	95·7	11	46·6	18	76·8	58·9	53·9	61	153·4	40·7	1·69	5	4·4
Adelaide	101·5	6	51·3	30	83·6	62·1	52·5	48	157·4	40·8	1·09	5	3·5
Perth	106·1	6	50·0	11	80·5	59·9	53·6	55	164·0	43·5	·03	3	3·0
Coolgardie	99·0	3	46·0	27	86·1	58·9	50·2	43	165·0	42·0	·23	1	2·4
Hobart, Tasmania .	89·3	9	44·0	17	69·0	53·4	50·9	63	136·7	39·6	1·25	15	6·3
Wellington ...	77·0	28	43·4	10	66·7	55·1	53·0	75	137·0	31·0	2·32	16	6·9
Auckland	77·0	4, 28	49·0	22	71·9	57·4	56·5	75	150·0	45·0	2·22	6	5·0
Jamaica, Kingston .	...	...	..	...	...	...	...	...	...	...	...	...	...
Grenada	89·0	4	70·0	10	83·7	73·1	...	71	136·0	...	2·61	13	2·5
Toronto	55·2	16	4·5	2	37·6	23·8	23·8	82	62·3	1·6	2·42	11	6·4
Fredericton	47·5	27	3·0	14	37·7	3·0	...	80	...	...	3·90	13	6·2
St. John, N.B. ...	49·2	27	8·5	21	36·6	25·5	24·0	74	...	...	2·34	15	6·5
Edmonton, Alberta ...	59·1	13	-12·6	26	37·1	18·8	...	68	113·2	-20·1	·48	11	5·8
Victoria, B.C.	68·1	20	29·4	26	53·3	40·5	39·0	76	...	...	2·05	14	5·9